Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1. (currently amended) A rolling element which is made from a steel, the steel comprising 0.5 to 1.5 wt% carbon; 0.3 to 1.5 wt% Cr; and a total amount of 0.2 to 2.0 wt% of one or more alloy elements selected from the group consisting of V, Ti, Zr, Nb, Ta and Hf; wherein 0.4 to 4.0 % by volume of carbides ~~nitrides and carbonitrides~~ of said alloy elements having an average particle diameter of 0.2 to 5 μm are dispersed,

wherein the rolling element has a rolling contact surface layer, the rolling contact surface layer has a quench hardened layer which has been subjected to induction hardening, the quench hardened layer has a martensite parent phase and the martensite parent phase has a soluble carbon concentration of 0.3 to 0.8 wt%, and

said carbides in an amount of 0.4 to 4.0% by volume and cementite in an amount of 2 to 15% by volume are dispersed within the martensite parent phase.

Claim 2. (previously presented) The rolling element according to claim 1, wherein the 2 to 15% by volume of the cementite contains 2.5 to 10 wt% Cr as an average composition.

Claim 3. (previously presented) The rolling element according to claim 2, wherein prior austenite grains in the quench hardened layer are refined to have a particle size equal to or greater than the level of ASTM No. 10 and wherein the amount of retained austenite is adjusted to 10 to 50% by volume.

Claim 4. (previously presented) The rolling element according to claim 1, wherein said steel further comprises 0.5 to 3.0 wt% Si, 0.20 to 1.5 wt% Al or 0.5 to 3.0 wt% (Si + Al), and one or more elements selected from the group consisting of Mn, Ni, Mo, Cu, W, B, and Ca, unavoidable impurity elements selected from the group consisting of P, S, N and O, and a balance of Fe.

Claim 5. (previously presented) The rolling element according to claim 4, wherein said steel further comprises 0.3 to 1.5 wt% Ni and 0.2 wt% or more Al.

Claim 6. (previously presented) The rolling element according to claim 5, wherein cementite and retained austenite are dispersed in the quench hardened layer.

Claim 7. (previously presented) The rolling element according to claim 4, wherein said steel further comprises one or more alloy elements selected from the group consisting of 0.2 to 1.5 wt% Mn; 0.5 wt% or less Mo; and 0.5 wt% W or less.

Claim 8. (previously presented) The rolling element according to claim 7, wherein cementite and retained austenite are dispersed in the quench hardened layer.

Claim 9. (previously presented) The rolling element according to claim 1, wherein the quench hardened rolling contact surface layer is formed by induction hardening of the steel such that rapid heating of the steel to a quenching temperature of 900 to 1050°C higher than the A1 temperature is carried out within 10 seconds from room temperature, or from a temperature equal to or lower than the A1 temperature when the steel is preheated, and then rapid cooling is carried out.

Claim 10. (previously presented) The rolling element according to claim 9, which is a gear used under a slipping condition, wherein the quench hardened layer is formed along the contour of teeth of said gear by quenching by means of the induction heating.

Claim 11. (previously presented) The rolling element according to claim 1, which is a gear used under a slipping condition and wherein a compressive residual stress of at least 50 kgf/mm^2 or more remains at the roots of the teeth.

Claim 12. (previously presented) The rolling element according to claim 11, wherein the compressive residual stress is generated by mechanical means.

Claims 13 to 19. (canceled)

Claim 20. (previously presented) A method of producing a rolling element from a steel,

the steel comprising 0.5 to 1.5 wt% carbon; 0.3 to 1.5 wt% Cr; and a total amount of 0.2 to 2.0 wt% of one or more alloy elements selected from the group consisting of V, Ti, Zr, Nb, Ta and Hf, wherein 0.4 to 4.0 % by volume of carbides of said alloy elements, and having an average particle diameter of 0.2 to 5 μm and 7.5 to 20 % by volume of cementite are dispersed,

the method comprising subjecting said steel to induction hardening by heating and quenching,

wherein the rolling element has a rolling contact surface layer, the rolling contact surface layer has a quench hardened layer which has been subjected to induction hardening, the quench hardened layer has a martensite parent phase and the martensite parent phase has a soluble carbon concentration of 0.3 to 0.8 wt% and

wherein 0.4 to 4.0% by volume of said carbides and 2 to 15% by volume of cementite are dispersed within the martensite parent phase.

Claim 21. (previously presented) The method of producing a rolling element according to claim 20, wherein by use of a steel in which the Cr concentration of the cementite has been adjusted to 2.5 to 10 wt% and which has been subjected to a thermal treatment for spheroidizing the cementite, the soluble carbon concentration of the martensite parent phase is adjusted to 0.35 to 0.8 wt%, 2 to 15 % by volume of granular cementite having an average particle diameter of 1.5 μm or less is dispersed in the parent phase, and 10 to 50% by volume of retained austenite is formed.

Claim 22. (previously presented) The method of producing a rolling element according to claim 21, wherein said induction hardening of the rolling contact surface layer of the steel is performed such that rapid heating of the steel to a quenching temperature of 900 to 1050°C higher than the A1 temperature is carried out within 10 seconds from room temperature, or from a temperature equal to or lower than the A1 temperature when the steel is preheated, and then rapid cooling is carried out.

Claim 23. (previously presented) The method of producing a rolling element according to claim 22, the rolling element being a gear used under a slipping condition,

wherein said induction hardening is performed such that an induction-hardened-contour gear having a quench hardened layer formed along the contour of teeth of the gear is produced with a speed of heating at least from the A1 temperature to said quenching temperature being 150°C/sec or more.

Claim 24. (canceled)

Claim 25. (previously presented) The method of producing a rolling element according to claim 20, wherein the compressive residual stress of the rolling contact surface layer is increased by mechanical means.

Claim 26. (previously presented) The rolling element according to claim 12, wherein the mechanical means comprises shot peening.

Claim 27. (previously presented) The method of producing the rolling element according to claim 25, wherein the mechanical means comprises shot peening.